DOCUMENT RESUME

ED 155 598 CS 004 100

AUTHOR Spalding, Norma V.
TITLE Using a Group Jigsaw Technique to Teach Developmental Reading Skills.
PUB DATE Mar 78
NOTE 19p.; Paper presented at the Annual Meeting of the Western College Reading Association (11th, Long Beach, California, March 16-19, 1978)

EDRS PRICE MF-$0.83 HC-$1.67 Plus Postage.
DESCRIPTORS College Students; *Developmental Reading; *Educational Needs; *Low Achievers; Post Secondary Education; Reading Centers; *Reading Instruction; Remedial Reading; Remedial Reading Clinics; *Remedial Reading Programs; Small Group Instruction; *Teaching Techniques

ABSTRACT

The Reading Assistance Program at San Jose State University was introduced through the aid of credential candidates from the reading specialist, educational counseling, and bilingual-multicultural specialist programs. Low-achieving university freshmen were taught in small groups using the jigsaw technique in which each student is given a piece of the learning puzzle. This concept builds group respect for the individual in an "each one, teach one" format. The evaluation of the pretest and posttest data for 143 students demonstrated a significant improvement in reading grade level. Three suggestions are given for future programs. First, a training program with a component to teach intercultural awareness should be added to the Reading Assistance Program. Second, a careful study should be made of those students whose scores on the reading tests did not improve; these students should be referred to a community college program where the competition is more equitable and the pace is slower. Third, learning disabilities specialists should be matched at a very early stage with tutees who have the lowest scores. (Samples of test questions are included.) (JF)

****
* Reproductions supplied by EDRS are the best that can be made *
* from the original document. *
****

ED155598

U.S. DEPARTMENT OF HEALTH, EDUCATION & WELFARE
NATIONAL INSTITUTE OF EDUCATION

THIS DOCUMENT HAS BEEN REPRODUCED EXACTLY AS RECEIVED FROM THE PERSON OR ORGANIZATION ORIGINATING IT. POINTS OF VIEW OR OPINIONS STATED DO NOT NECESSARILY REPRESENT OFFICIAL NATIONAL INSTITUTE OF EDUCATION POSITION OR POLICY

"PERMISSION TO REPRODUCE THIS MATERIAL HAS BEEN GRANTED BY

Norma V. Spalding

TO THE EDUCATIONAL RESOURCES INFORMATION CENTER (ERIC) AND USERS OF THE ERIC SYSTEM."

Using A Group Jigsaw Technique to Teach Developmental Reading Skills

Norma V. Spalding, ED.D
Associate Professor, Special Education Department
San Jose State University

Abstract

Funded by the Chancellor's Innovative funds, a Reading Assistance Program brought together Reading Specialist Credential candidates, Bilingual-Multicultural Credential candidates, and Educational Counseling MA candidates as tutors and teaching assistants for students from the Educational Opportunity Program (EOP), University Alternative Program

CS504100

(UAP) and Project Aspire. Under the direction of Norma V. Spalding, ED.D, the Reading Laboratory coordinated the program whose purpose was to improve the reading skills of students disadvantaged by inadequate schooling or language differences. The method used was a jigsaw technique in which each student was given a piece of the learning puzzle and for which he was valued by the others. Samples of techniques for teaching organization of writing and developing vocabulary skills are included.

Evaluation of the Reading Assistance Program Scores for Fall, 1977 demonstrated a significant improvement in reading grade level in pre and post test data. The Paired t Statistics Test resulted in $t = 12.89$, which is significant a $p < .01$.

The Reading Assistance Program is a program funded at San Jose State University's Reading Lab for the 1977-1978 academic year by the California State University and College System's Chancellor's fund for New Program Development and Evaluation. This program will measure the improvement of reading skills of students who are taught in small groups using a Jigsaw Concept for Learning in which each student holds a piece of the puzzle, thus encouraging his contribution to the group and to his own learning. This jigsaw concept has been implemented through the aid of credential candidates from the Reading Specialist, Educational Counseling, and Bilingual-Multicultural Specialist programs at San Jose State University. The program has had the active support of the University administration, the Educational Opportunity Program, the University Alternative Program, Project Aspire, faculty from the School of Education and the Department of Special Education which administers the program. The program has been coordinated by Norma V. Spalding ED.D, Associate Professor, Special Education, and Northern California Director of the Western College Reading Association.

This paper will describe the various elements of the Reading Assistance Program, give examples of ways in which the jigsaw concept has been implemented, and present a statistical picture of the results of the first semester's operation. It will conclude with a list of recommendations for future work in this area.

Many sections of the university population have worked together to provide reading development for the incoming freshmen at San Jose State University. The administration of the university has supported the pro-

gram by alloting faculty time, contributing funds for equipment and supplies and providing student assistance monies for help in carrying out the small group aspects of the program. The office of University Relations has provided publicity and services for generating interest in the community as well as on the campus.

The Educational Opportunity Program (EOP) serves minorities and others who come from low-income families, who have unique qualities to contribute to the university community, and/or who come from schools which have given the students inadequate preparation for college. The EOP has been vitally interested in the Reading Assistance Program, directing students into the classes, providing tutors, a tutorial specialist and clerical services to help the RAP succeed.

The University Alternative Program is a program which gives ex-offenders an opportunity to enhance their skills by providing counseling, loan funds and other assistance at San Jose State University. They have contributed tutoring services as well as directing students into the program.

Project Aspire is a federally funded tutorial project which has as its purpose to lower the drop-out rate of low-achieving students in the university system. The Reading Assistance Program and Aspire are working closely together to serve these students whose poor reading skills often contribute to the low grades and poor self-esteem of college drop-outs. Project Aspire has contributed one senior tutor and two junior tutors to the Reading Assistance Program.

Faculty from the School of Education have directed thirty-six reading

specialist credential candidates, four educational counseling candidates and one bilingual-multicultural credential candidate into the program. In addition tutors have been sent to the program from Afro-American Studies and the Natural Sciences areas.

Faculty thus have been very supportive of the need for improved reading skills for these often low-achieving students. In addition, faculty members from many disciplines have requested grade level analyses of textbooks and have indicated their willingness to select texts which more nearly match the reading levels of their students. Outreach efforts have resulted in invitations for brief presentations to departmental faculty meetings describing the RAP, and invitations to deliver brief presentations in regular academic classes as well. These presentations, besides describing the Reading Lab program, include:

1) A tip on reading in the subject-matter area.
2) A method of learning vocabulary.
3) A technique useful for increasing reading speed.

Feedback on these outreach activities indicate that they are highly successful.

The Department of Special Education has been very supportive of the RAP program. We are working out plans for using Learning Handicapped Credential candidates as tutors in the Reading Lab next year. The Department has contributed faculty time, supplies, equipment, and travel funds to the program.

In summing up the contributions of the San Jose State University community, we must conclude that it has been extremely sympathetic to

the aims of this innovative program.

It is important at this point to inquire, "Just what is a jigsaw group?" How does it work?" The Jigsaw Concept stems from the work of Elloit Aronson as reported in Psychology Today. It is a concept which builds group respect for the individual in a kind of each-one teach-one format. Students react well to the group effort and have shown skills improvement as a result of consistent implementation of the activities. Two examples of the kinds of activities which the students engage in will be given.

To teach recognition of the structure of an essay, and the organization of an essay, the organization of sample essays is reviewed in the class by the teacher or reading specialist. Carefully organized essays, such as those in Spargo's The Now Student (1977) are used. Thesis statements are underlined and the introduction, body, and conclusion are delineated. Then a jigsaw group of five students is formed. Together the group selects a topic and limits it and writes a thesis statement. The members of the group then each take one part of the essay to be written and construct a paragraph as part of a group essay. This can be done in two ways. The first student writes the introduction and includes the thesis statement. He then folds under his effort. The second student writes the first paragraph and folds his under, etc. The fifth student must restate the thesis statement in his concluding paragraph. Or the students each write their agreed-upon paragraphs and then read them to the group, seeking one another's help in developing transitions from one paragraph to another. It quickly becomes apparent to the students that

all parts of the essay are related to one another, and that each student has an important contribution to make to the essay and to the group.

A useful exercise in vocabulary building can use jigsaw groups. Students make an agreed-upon number of vocabulary cards (such as five) of words from their textbooks and outside reading. Then the jigsaw groups are formed, and the words are presented and meanings discussed and the students are given a limited amount of time to teach the words to the members of their group. At the next class meeting, the words are reviewed and all of the words from one group are exchanged for those of another. A record is kept of the number of words identified correctly by each group. Since the score sheet is kept of the entire group, rather than for individuals, it becomes important for each student to strengthen not only his own vocabulary but also that of the other members of his group.

A preliminary evaluation of the Reading Assistance Program was made for the Fall, 1977, semester by Carris, a research associate at San Jose State University.

He found that the Reading Assistance Program has been able to demonstrate change in student reading ability at a significant level. The mean change for the Reading Students represents a figure which is equivalent to an increase of two grade levels of reading ability. The data, however, does not indicate a significant change in self evaluative questions for Reading Assistance Program Personnel. The Personnel questionaire asked reading teachers, assistants and tutors to rate themselves in the areas of experience and abilities. Since the questionaire has not

been tested for validity and reliability, it is possible that a change did take place, but the instrument was not sensitive enough to pick it up.

Pre and Post test data was available for 143 students. The instrument used was the Diagnostic Reading Test Survey Section - Form C. The Paired t Statistics test was used to analyze the data. The results were as follows: $\bar{x}$ change pre to post = 11.95 points, sd of the change = 10.367.

Since there is an average of 5.29 points for each grade level in the DRT increase between grades 7-13 (the approximate range of most of the students), then the $\bar{x}$ of 11.95 represents an average increase of 2 grade levels for the entire class combined. Of course, this figure represents the entire group. There were a few students who showed no improvement at all.

When the pre and post test results were examined for each student, the results were as follows: $t = 12.89$, $t > 2.576$, $p < .01$.

At a later date, the evaluation plans call for a retest of some students in order to determine whether or not the change is lasting. At the same time, a comparison group of students who did not participate in the program will be selected and tested.

Student time in Reading Lab as a function of improvement was also examined. When the time students spent in the Reading Lab was correlated with their change in reading ability, the results were as follows: $r = 0.12$. These results would indicate that there is no relationship between the time spent in the lab and a change in reading ability. It must be pointed out, however, that there was a period of time, 30 - 40 hours of lab work, required in order for a student to obtain a grade of "pass" for the course. Consequently, $\bar{x}$ of time spent in the lab was 34.33 for the entire group. There was a general tendency for most stu-

dents (sd 11.77) to spend the prescribed amount of time in the lab. Post-test data was also not available for many of those who did not put many hours into this lab. They had a tendency to be lax in many of the course requirements as well as putting in lab time.

It is unfortunate that the data does not allow for conclusions to be drawn regarding an "ideal" amount of time students should spend in the lab.

Student reactions to the course was also examined. When samples of student feedback to the course were taken the results were skewed in a favorable direction. The rating to particular questions and student comments are included in Appendix A.

Pre and Post experimental self-report measures were taken of Reading Program Personnel, and the results to various questions were as follows:

> I would classify the <u>amount</u> of experience I have had with teaching or assisting reading improvement as: (Circle one number)
>
> None 1 2 3 4 5 6 7 8 9 10 a great deal of experience
>
> Results showed $\bar{x}$ pre = 4.37, $\bar{x}$ post = 6.40, t = 1.98 and $p > .05$. There was no significant difference between the groups.
>
> My experience in working with minority groups in a <u>non-classroom</u> setting is: (Circle one number)
>
> None 1 2 3 4 5 6 7 8 9 10 a great deal of experience
>
> Results were the following: $\bar{x}$ pre = 5.42, $\bar{x}$ post = 5.86, t = -.45, and $p > .05$. There was no significant difference between the groups.

As stated before, these and other questions on the personnel survey were not tested for validity and reliability since this was not the main emphasis of the evaluation. It is possible that some possible positive or negative attitudnal change did take place but was not measured.

A small sample of faculty from various departments were selected and interviewed. The results are included on the survey. (Appendix B) Each faculty interviewed was also asked if he would like his texts tested for reading level. Many, but not all, expressed interest, and about one third have submitted text copies to the reading lab.

Of importance here are the feelings of the faculty that the ability to read on a college level is extremely important. More than ½ of the faculty interviewed said they frequently encounter students "who do not seem to be able to read well enough to complete their courses successfully." Many find students "who do not follow written test instructions." Many find students who "fail to understand what they have read." Many find students "who do not understand college level vocabulary words."

At the end of the first summester, the use of the group jigsaw technique seems to have been quite successful in improving the reading skills of minority and other low-achieving freshmen students at San Jose State University. Several recommendations must be made, however, as implementation of the program has gotten underway. First, one persistent question needs an answer. Is there any need or value in matching the tutors and tutees in ethnic cultural background? Many tutorial specialists are concerned about whether there is any benefit to matching the tutor and tutee. A training program which has a component to teach intercultural awareness should be added to the Reading Assistance Program.

Second, a careful study should be made of those students whose scores on the reading tests did not improve. These were frequently the same students who found all college work extremely difficult and who were put on probation at the end of the semester. A plan should be developed to recommend that these students be placed in a community college program where the competition is more equitable and the pace is slower.

Third, learning disabilities specialists should be matched at a very early state with tutees who have the lowest scores. It seems likely that some of the students have visual perceptual problems that are interfering with their reading performance.

Working with the Reading Assistance Program has been a very rewarding experience. Having the opportunity to experiment with a new teaching technique is exciting too. The Innovative Funds from the Chancellor's office have been used to affirm the value of a jigsaw group teaching method for improvement of reading skills.

References

Aronson, Busing and racial tension: The jigsaw route to learning and liking. Psychology Today, Feb., 1975, 413-420.

Spargo, E. The Now Student. Providence, R.I.: Jamestown, 1977.

Insturctor Feedback Survey

The intention of this Survey is to provide the instructor with feedback on the effectiveness of this course. The feedback can then be used as a basis for change or continuance.

Statements	5 below average	4	3 average	2	1 above average
1. Students' thinking is stimulated	3	3	18	16	7
2. Class presentations are organized	2	7	21	15	6
3. Clear interpetation and explanation of concepts are provided.	0	1	21	14	16
4. Diverse points of view are presented.	4	5	22	14	4
5. Subject matter is presented enthusiastically.	4	6	17	13	9
6. Attentiveness to and interest in student is evident.	8	3	20	11	8
7. Class discussion is encouraged	5	9	16	12	8

8. Comments: Please contribute any comments you wish to make.

Pro	Con
15	11

Instructor Feedback Survey (Student Comments)

Results: Spelling and sentence errors are reproduced exactly as written.

I think the class needs a little growing-up. I know most students in the class are below reading and writing for college level work, but these students aren't that dumb, give the student credit for some understanding of work and don't treat them as childness and so dumb.

This class is a waste of time. I'm not learning anything. I shouldn't be forced to take this class when I already took it in summer program.

Pertaining to the staff of the Reading Assistance Program, their all good people but I feel strongly that their attentiveness and interest towards students is very lax. I feel that the entire program would be much better for all if harmony and understanding areas in the class could be much better!

I think the Reading Lab is a very good thing here at SJSU and I plan to continue coming in the next 4 years.

Comments on how RAP can be improved. With money.

None.

I enjoy the lab more than I enjoy the class, the lab helps me more.

None.

More centered on speed reading. I get alot out of the lab but not class.

Ideas for study. Methods involve basic skills and are good however very basic--I question whether these are actually used by students in their everyday homework.

I wish I had taken class when I was a freshmen instead of know!

Many of the class presentations are disorganized. This is true of some of the presentations presented to the entire class as well as some of the smaller presentations presented in the groups.

I feel the reading lab is extremely helpful to me. Yet I can see room for improvement in the level of counceling that is provided. Particulary, students should be counceled as to how they can sue K. L. materials so as to gain the most benefits from them. Also the conferences which we are supposed to have every three weeks are somewhat disorgainzed.

Instructor Feedback Survey (con't)

Results:

Very helpful.

Reading Lab has become very

This class would be better if it could be made interesting.

This program is very helpful too me.

This program is very helpful to me. It helps me to relate better in my other classes. Especially, speed reading; homework gets done faster & eaiser.

I think it's a good class, but it is very noise at times. If the noises went down, it would be even better. I think the students should have a better outlook in the class but for some reason they don't, why? I don't know.

Classroom and teachers are O.K. But some of students are a little noisy, and when we have the small groups, I would like to go to some of them more than once.

I feel that the Reading Assistance Program is very beneficial to the students here at San Jose State. I think it's very well organized.

Should arouse student's interest toward this course. Often students were not serious because the regulation of the class was not tight enough. I suggest the teachers should put more pressure on the students.

I like this class. Of course I am older, Young people have yet to value a good thing.

The class is not stable and therefore this class is not a learning atmosphere for myself. The class or fellow students see the class as a big joke. It's not taken seriously and this is reflected in (group) class attention & participation. This should be very vivid because it is from the student's point of view.

I've learned alot in this class, but it is too slow. The students in the class are always talking & playing around. The teachers should show more control over the class. Class enthusiasm is low, because many students are not serious.

I think this class need a bit more reinforcement. Should be more strict in dealing with students.

Instructor Feedback Survey (con't)

Results:

In the reading lab, I do not get that much help from you aides. I wish you would get more reading material that is different. I don't like to read the same thing almost everytime that I am in there. I do not go that much even though I have the time. I need it because I have to pass the class. And I want to play football next year. I like to read but the books in there are dull, get some stores about animals, kids, adventures, and tradgedies.

I tell the Reading Lab is helping me alot. To be able to widen my knowledge. I feel the program is very interesting & helpful to me.

I think the reading is very good. It has helped me alot.

I don't think that this courre is necessary. But that is my own opinion, I think that it would be helpful for somebody, not for me.

I think the reading program is a success. It has helped me in different areas such as study habits, schedules, vocabulary, and tutoring. I hope that it will continue to be a success.

I feel that the reading lab can be helpful at times.

I feel that the class is very good and what we get out of the class depends on the students attitude.

FACULTY INTERVIEW

1. How important do you think the ability to read on a college level is to successful completion of your courses?

__ not important

__ somewhat important

2 important

22 extremely important

2. How often do you encounter students who, in your opinion, do not seem to be able to read well enough to complete your courses successfully?

1 never

9 rarely

11 frequently

3 very frequently

3. Using often, sometimes or never, please describe the frequency of occurence of the following:

A. Your students have not read in preparation for class.

3 often 19 sometimes __ never

B. Students complain that reading assignments are too long.

3 often 19 sometimes 2 never

C. Students fail to understand what they have read.

10 often 14 sometimes __ never

D. Students do not follow written test instructions.

6 often 17 sometimes 1 never

E. Students do not understand college level vocabulary words.

8 often 14 sometimes 2 never

FACULTY INTERVIEW

4. How often do you request that your students read passages aloud in class?

__ often 16 sometimes 8 never

5. If you encountered a student whom you suspected had a reading problem, would you feel comfortable bringing it to his/her attention?

22 yes 1 no

6. What, if any, campus facilities are you aware of that assist students in raising their reading rate to college level?

6 Reading Lab Ed 231 2 Norma Spalding

13 Reading Lab 3 None

7. What campus building are these facilities located in?

17 Ed Building 1 Faculty Office Building

6 No Answer

8. Have you known or do you now know any students using these facilities:

14 yes 10 no

9. If yes to above, have you noticed anything that would indicate that their ability to read is improving?

10 yes 6 no 8 no answer

10. Check the grade level of the majority of your students.

7 freshman-sophomore 3 junior-senior

10 graduate 2 varies 2 ½ & ½